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1	47978	(707/$ 345/$).ccls.	USPAT	2004/04/22 12:41
2	2372	(707/104.1 345/423).ccls.	USPAT	2004/04/22 12:42
3	1927	determining same relationship$1 same object$1	USPAT	2004/04/22 12:42
4	34384	tile$1	USPAT	2004/04/22 12:43
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6	34393	(geometry adj1 approximation$1) tile$1	USPAT	2004/04/22 12:44
7	3226	(quadtree linear spatial hybrid) near3 index$3	USPAT	2004/04/22 12:45
8	440	tessellation	USPAT	2004/04/22 12:45
9	199564	boundary	USPAT	2004/04/22 12:46
10	251160	intersect$8	USPAT	2004/04/22 12:46
11	1878	(primary secondary) adj1 filter$1	USPAT	2004/04/22 12:47
12	0	((707/104.1 345/423).ccls.) and (determining same relationship$1 same object$1) and ((geometry adj1 approximation$1) tile$1) and ((quadtree linear spatial hybrid) near3 index$3) and tessellation and (boundary intersect$8) and ((primary secondary) adj1 filter$1)	USPAT	2004/04/22 12:48
13	0	((707/$ 345/$).ccls.) and (determining same relationship$1 same object$1) and ((geometry adj1 approximation$1) tile$1) and ((quadtree linear spatial hybrid) near3 index$3) and tessellation and (boundary intersect$8) and ((primary secondary) adj1 filter$1)	USPAT	2004/04/22 12:48
14	1	(determining same relationship$1 same object$1) and ((geometry adj1 approximation$1) tile$1) and ((quadtree linear spatial hybrid) near3 index$3) and tessellation and (boundary intersect$8) and ((primary secondary) adj1 filter$1)	USPAT	2004/04/22 12:52
15	29	((geometry adj1 approximation$1) tile$1) and ((quadtree linear spatial hybrid) near3 index$3) and (boundary intersect$8) and (tile$1 tessellation) and (((707/$ 345/$).ccls.) (determining same relationship$1 same object$1))	USPAT	2004/04/22 12:54
16	3	(((geometry adj1 approximation$1) tile$1) and ((quadtree linear spatial hybrid) near3 index$3) and (boundary intersect$8) and (tile$1 tessellation) and (((707/$ 345/$).ccls.) (determining same relationship$1 same object$1))) and tessellation	USPAT	2004/04/22 12:55
17	6	((707/104.1 345/423).ccls.) and ((geometry adj1 approximation$1) tile$1) and ((quadtree linear spatial hybrid) near3 index$3)	USPAT	2004/04/22 12:58
18	0	((quadtree linear spatial hybrid) near3 index$3) same tessellation	USPAT	2004/04/22 12:58
19	48356	(determining same relationship$1 same object$1) sae tile$1	USPAT	2004/04/22 12:58
20	1	(determining same relationship$1 same object$1) same tile$1	USPAT	2004/04/22 12:59

Quadtrees for embedded surface visualization: cons and efficient data structures

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Abstract:
The **quadtree** data structure is widely used in digital image processing and c graphics for modeling spatial segmentation of images and surfaces. A **quadtr** in which each node has four descendants. Since most algorithms based on **qu** require complex navigation between nodes, efficient traversal methods as we efficient storage techniques are of great interest. In this paper we first propos efficient **indexing** scheme for a linear (pointerless) **quadtree** data structure. **quadtree** is stored using a unidimensional array of nodes. Our **indexing** sch property that the navigation between any pair of nodes can be computed in c time. Moreover the navigation across multiple **quadtrees** can be achieved at cost. We illustrate our results on applications in computer graphics. We first s the problem of computing a so-called restricted **quadtree** can be solved at o e.g. with a computational complexity having the order of magnitude of the pr Then, we explain how this problem can be solved in the case of surfaces mod multiple **quadtrees**. Finally, we show how a **tessellated** sphere can be imple and navigated using our data structure

Index Terms:
image segmentation **quadtrees** computational complexity computer graphics digi processing embedded surface visualization **indexing scheme** **quadtree** **quadtree** structure spatial segmentation **tessellated sphere**

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